Complete Summary

GUIDELINE TITLE

Coronary angiography and indications for CABG or angioplasty.

BIBLIOGRAPHIC SOURCE(S)

Finnish Medical Society Duodecim. Coronary angiography and indications for CABG or angioplasty. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2004 Sep 14 [Various].

GUIDELINE STATUS

This is the current release of the guideline.

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COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

- Coronary heart disease, with or without angina pectoris
- Acute imminent myocardial damage

GUIDELINE CATEGORY

Diagnosis
Management

CLINICAL SPECIALTY

Cardiology
Family Practice
Internal Medicine

INTENDED USERS

Health Care Providers
Physicians

GUIDELINE OBJECTIVE(S)

Evidence-Based Medicine Guidelines collects, summarizes, and updates the core clinical knowledge essential in general practice. The guidelines also describe the scientific evidence underlying the given recommendations.

TARGET POPULATION

- Patients with angina pectoris, including:
    - Severe stable angina pectoris
    - Occlusion of the left anterior descending artery or 3-vessel disease after exercise tolerance test
    - Angina after acute myocardial infarction
    - Unstable angina resistant to medication
    - Angina pectoris after percutaneous transluminal coronary angioplasty
    - Recent angina after coronary artery bypass graft surgery in cases with opportunity for percutaneous transluminal coronary angioplasty
- Patients without angina pectoris in whom angiography may be indicated or considered
- Patients with acute imminent myocardial damage

INTERVENTIONS AND PRACTICES CONSIDERED

1. Coronary angiography
2. Percutaneous transluminal coronary angioplasty, balloon angioplasty
3. Coronary artery bypass graft surgery
4. Thrombolytic therapy, such as accelerated tissue plasminogen activator or streptokinase
5. Platelet glycoprotein IIb/IIIa receptor antagonists, such as abciximab, tirofiban, or eptifibatide
6. Ticlopidine plus aspirin or oral anticoagulation

MAJOR OUTCOMES CONSIDERED

- Mortality
- Incidence of non-fatal myocardial infarction
- Incidence of major bleeding
- Rate of re-infarction or recurrent ischaemia
- Frequency of strokes
- Improvement in ejection fraction or decrease in New York Heart Association functional class
- Redilatation rate

- Elective bypass surgery rate
- Freedom from or reduction in symptoms
- Need for repeated revascularization

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The evidence reviewed was collected from the Cochrane database of systematic reviews and the database of abstracts of reviews of effectiveness (DARE). In addition, the Cochrane Library and medical journals were searched specifically for original publications.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

A. Strong research-based evidence. Multiple relevant, high-quality scientific studies with homogenic results.
B. Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
C. Limited research-based evidence. At least one adequate scientific study.
D. No research-based evidence. Expert panel evaluation of other information.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The levels of evidence [A-D] supporting the recommendations are defined at the end of the "Major Recommendations" field.

Aims

- To determine the extent of anatomic coronary artery obstruction when coronary artery bypass grafting (CABG) (Yusuf et al., 1994; DARE-920031, 1999; Rihal, 2002; Davies et al., 1997) [A] or percutaneous transluminal coronary angioplasty (PTCA) (Sim et al., 1995; DARE-953385, 1999) [A] is considered.
- To evaluate difficult diagnostic problems in patients with unstable angina, survival of sudden death, atypical chest pain.

Indications in Patients with Angina Pectoris (AP)

- Severe stable AP resistant to medication
- Occlusion of left anterior descending artery (LAD) or a 3-vessel disease is suspected on the basis of an exercise tolerance test(also when the symptoms are mild)
    - Ischaemic ST (>2 mm) with minimal load and low heart rate
    - Deficient rise in blood pressure (BP) during exercise test
- AP after acute myocardial infarction
    - Pain at rest or when walking while the patient is still in the hospital
    - AP and severe heart failure (myocardial stunning)
    - ST-depression outside the infarction area during exercise
- Unstable AP resistant to medication
- AP following PTCA

- In cases of rapidly recurring AP after coronary artery bypass grafting, PTCA may be considered.

Indications in Patients without AP

- Angiography may be indicated or considered:
    - In patients accepted for heart surgery (e.g., valve prosthesis)
    - In survivors of ventricular fibrillation without myocardial infarction (MI)
    - When the exercise electrocardiogram (ECG) changes are clearly pathological
    - In acute pulmonary oedema without cause
    - When electrocardiogram after a T-wave infarction (non-Q-wave infarction) shows long lasting and wide T inversions in anterior wall leads
    - As a diagnostic method in special situations (e.g., left bundle branch block [LBBB] and left ventricular hypertrophy [LVH] disturb the interpretation of the exercise test)

Management of Acute Imminent Myocardial Damage

- Acute PTCA is preferred to thrombolysis whenever available (Grines et al., 2003; DARE-20030287, 2004; Keeley, Boura, & Grines, 2003; DARE-20038039, 2004) [A]: the results are better and the price is lower
- Acute PTCA may be an alternative to thrombolysis also when the latter is contraindicated or shows no effect

Related Evidence

- Patients with moderate to severe left ventricular systolic dysfunction and concomitant limiting angina have improved survival and physical functioning after coronary artery bypass grafting (Baker et al., 1994; DARE-944148, 1999) [C].
- The medium and long-term outcomes after balloon angioplasty are favourable with a low mortality and myocardial infarction rate and a low rate of later restenosis (after 6 months) (de Feyter et al., 1994; DARE-940217, 1999) [C].
- PTCA may lead to greater reduction in angina, but there is no evidence of improved survival or reduction in the subsequent need for revascularization, although trends do not favour angioplasty (Bucher et al., 2000; DARE-20008332, 2001) [C].
- In patients undergoing percutaneous revascularization, platelet glycoprotein IIb/IIIa receptor antagonists reduce death, myocardial infarction, and need for urgent reintervention (Bosch & Marrugat, 2004; Vorchheimer, Badimon, & Fuster, 1999; DARE-998484, 2000) [A].
- Ticlopidine plus aspirin is more effective than oral anticoagulation in preventing coronary events in patients undergoing coronary stenting (Cosmi et al., 2004) [A].

Definitions:

Levels of Evidence

A. Strong research-based evidence. Multiple relevant, high-quality scientific studies with homogenic results.
B. Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
C. Limited research-based evidence. At least one adequate scientific study.
D. No research-based evidence. Expert panel evaluation of other information.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Concise summaries of scientific evidence attached to the individual guidelines are the unique feature of the Evidence-Based Medicine Guidelines. The evidence summaries allow the clinician to judge how well-founded the treatment recommendations are. The type of supporting evidence is identified and graded for select recommendations (see the "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Appropriate use of coronary angiography to diagnosis the extent of coronary artery obstruction before coronary bypass surgery or percutaneous transluminal coronary angioplasty (PTCA)
- Improved survival and physical functioning after revascularization surgery

POTENTIAL HARMS

- Potential complications associated with invasive procedures, including bleeding and death
- Thrombocytopenia occurs infrequently with abciximab and tirofiban.
- In one study, the combined use of ticlopidine and aspirin increased the risk of neutropenia and thrombocytopenia.

Subgroups Most Likely to Be Harmed

Patients older than 70 years with severe ventricular dysfunction and comorbid conditions had a higher incidence of operative mortality following coronary bypass graft surgery.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2001 Apr 30 (revised 2004 Sept 14)

GUIDELINE DEVELOPER(S)

Finnish Medical Society Duodecim - Professional Association

SOURCE(S) OF FUNDING

Finnish Medical Society Duodecim

GUIDELINE COMMITTEE

Editorial Team of EBM Guidelines

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Primary Authors: Editors

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

This guideline is included in a CD-ROM titled "EBM Guidelines. Evidence-Based Medicine" available from Duodecim Medical Publications, Ltd, PO Box 713, 00101 Helsinki, Finland; e-mail: info@ebm-guidelines.com; Web site: www.ebm-guidelines.com.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

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